



## Association between ambient temperature and acute myocardial infarction hospitalisations in Gothenburg, Sweden: 1985-2010

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### Abstract:

Cardiovascular disease (CVD) is the number one cause of death globally and evidence is steadily increasing on the role of non-traditional risk factors such as meteorology and air pollution. Nevertheless, many research gaps remain, such as the association between these non-traditional risk factors and subtypes of CVD, such as acute myocardial infarction (AMI). The objective of this study was to investigate the association between daily ambient temperature and AMI hospitalisations using a case-crossover design in Gothenburg, Sweden (1985-2010). A secondary analysis was also performed for out-of-hospital ischemic heart disease (IHD) deaths. Susceptible groups by age and sex were explored. The entire year as well as the warm (April-September) and cold periods (October-March) were considered. In total 28 215 AMI hospitalisations (of 22 475 people) and 21 082 out-of-hospital IHD deaths occurred during the 26-year study period. A linear exposure-response corresponding to a 3% and 7% decrease in AMI hospitalisations was observed for an inter-quartile range (IQR) increase in the 2-day cumulative average of temperature during the entire year (11°C) and the warm period (6°C), respectively, with and without adjustment for PM10, NO2, NOx or O3. No heat waves occurred during the warm period. No evidence of an association in the cold period nor any association between temperature and IHD deaths in the entire year, warm or cold periods - with and without adjusting for PM10, NO2, NOx or O3 was found. No susceptible groups, based on age or sex, were identified either. The inverse association between temperature and AMI hospitalisations (entire year and warm period) in Gothenburg is in accordance with the majority of the few other studies that investigated this subtype of CVD.

**Source:** <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3639986>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Temperature

**Air Pollution:** Ozone, Particulate Matter, Other Air Pollution

**Air Pollution (other):** NO2; NOx

**Temperature:** Fluctuations

#### Geographic Feature:

# Climate Change and Human Health Literature Portal

resource focuses on specific type of geography

Urban

## **Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Europe

**European Region/Country:** European Country

**Other European Country :** Sweden

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Morbidity/Mortality, Other Health Impact

**Cardiovascular Effect:** Heart Attack, Other Cardiovascular Effect

**Cardiovascular Disease (other):** Ischemic heart disease (IHD)

**Other Health Impact:** Hospitalization

**Population of Concern:** A focus of content

## **Population of Concern:**

populations at particular risk or vulnerability to climate change impacts

Elderly

## **Resource Type:**

format or standard characteristic of resource

Research Article

## **Timescale:**

time period studied

Time Scale Unspecified